The Task before Us

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It is only fair that I should acquaint you with some of the personal background of this talk. The immediate incentive came from Professor Northrop's talk last month, which to those who heard it was a stimulating and for me, at least, a provocative experience. He painted a vivid picture of the roots of our democracy in the philosophy of the founding fathers, a philosophy based on scientific views of nature stemming from Galileo and Newton. Professor Northrop illuminated his thesis by the observation that the moral awakening of Thomas Jefferson followed on his study of mathematics, with its revelation of absolute certainty and rigor based on eternal truths. He closed his talk with the intimation that we have been straying from the vision of the founding fathers, and his very last sentence was that the founding fathers were *men*, and men of high intelligence at that. As I listened I could not help wondering whether the philosophy of the founding fathers, if they were living today, would not be altered by the revolutions in scientific thinking of this century. In particular, how would Thomas Jefferson have reacted to the apparently irreconcilable schism between mathematicians as to the foundations of mathematics. Would he have reacted like Bertrand Russell, who in his early days set himself the goal of absolute rigor and certainty, and who has ended by declaring that the only certainty in this world is uncertainty? What sort of democracy would have been created by founding fathers who had taken to heart the lessons of relativity and quantum theory? I think the presumption is that it would at least have been different from what we have. If it would have been different, why should we not now be discussing how it would have been different? But a re-examination of fundamentals is distasteful to many, perhaps particularly in the context of present world affairs. It seems to me that from the long-range point of view it may turn out that the most serious scar left by our encounters with Nazism and Communism will have been inflicted by our defense of our

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democracy as a finished institution. We have forgotten to regard it as a growing thing, evolving to meet our evolving conceptions of ourselves and our place in nature.

Professor Northrop's talk only accentuated in me an intellectual malaise which has many other sources. A growing anti-intellectualism is in the air, the manifestations of which on the political stage are too clearly before us to require further comment. Anti-intellectualism may be only one symptom of something more deep-seated. I must confess that the recent change of emphasis at my own University introduced by the new administration gives me misgivings in this direction. The emphasis is on a return to humanistic attitudes which we are forgetting in the hurly-burly of our technology, but without, as far as I can see, any notable revitalization of these humanities themselves in the light of our recent intellectual experiences. It seems to me that in this cry for a " return " there is grave danger that we shall turn our backs on a job which not only is not finished but which is hardly begun. This job is to assimilate into our whole intellectual outlook, and in particular into our relation to social problems, the lessons implicit in scientific experience. What these lessons are in detail or how they may modify our social structures is not yet evident; only is it evident that we are standing on the threshold of outlooks so revolutionary that when the revolution has been accomplished most of man's intellectual, as distinguished from his esthetic, history will be obsolete. If only a glimpse were caught of this situation, I think the importance of getting on with the problem thus presented would so overwhelm us that the possibility of any sort of " return " simply would not occur to us.

A theme such as this is one for the tongues and minds of angels; you may well ask by what right have I the temerity to undertake it? But I think the question of right does not bother me as much as another question, the question of profitableness. Will a talk on this theme do any good? One is, I think, justified in serious misgivings on this score. I was much taken aback recently by the remark of one of my scientific colleagues that people in general are fed up with being told what a mess the human race has got itself into and with any sort of destructive criticism. The widespread revolt against " positivism " is part of the same pattern. Somewhat in the same vein was a talk before this Academy a

number of years ago by the son of a very eminent philosopher. He described the intellectual confusion in the younger generation in England after the first World War, who had lost all sense of purpose and direction, and he placed the blame squarely on the older generation, who he said had failed the younger generation in not giving them the certainties they needed. This attitude is, I think, pretty widespread. As if a man can have certainty because he needs it, or as if the older generation can produce a certainty for their children which the human race in all its experience has not yet achieved!

This audience may perhaps be willing to take it as a compliment that in spite of all these misgivings I have nevertheless been willing to take the gamble that the loftiness of the theme might justify me in imposing on your time. I was encouraged to take this gamble by the remarks of President Land at the end of the last session, who said that a speaker for the next session had not yet been engaged and asked for suggestions. To which I responded by unblushingly suggesting myself. I am at any rate most grateful that you were willing to give me the opportunity.

I propose now in the first part of this talk to consider some of the changes in intellectual attitude forced on us by recent scientific experiences. The full effect of these changes on our attitude toward society will doubtless require considerable time to become manifest, and some of you may feel that the whole thing is too long-range and indirect to be of immediate concern. In the second part of the talk, however, I hope to present other sorts of consideration of more concrete and immediate application.

There has been extensive popular discussion of the lessons of both relativity theory and quantum theory, and such notions as the shortening of a meter stick when set in motion or the Heisenberg principle which states that a particle cannot simultaneously have both position and momentum are fairly well known. But it is not these narrow technical matters which are of significance for us, but broader points of view, points of view to which we would be equally forced whether a meter stick shortened or lengthened when set in motion. What appears to me to be one of the most important of these, so important that I would regard its possession as a necessary mark of a liberally educated man, is a vital realization that our thinking and our intellectual processes in general cannot be taken

for granted. When we think, we use intellectual tools; and these tools have properties and have their limitations. We usually take our concepts for granted, not realizing that their use grew over many generations, generations which never were very conscious of what was happening but were satisfied if the new concepts served the purposes of the moment. In particular, recent experience shows that when we push the application of many of these concepts into new fields, limitations appear which we could not have anticipated from anything in our former more limited common-sense experience. In fact, we have now come to *expect* that a concept inherited from our ancestors will not be applicable when pushed into fields hitherto unentered. Thus it is that our common-sense notions of simultaneity failed in new regions of extraordinarily high velocities, or our everyday notions of the permanence and identity of objects failed in the submicroscopic domain. Analogy should lead us to see that the presumption is that such social concepts as human rights or duties or responsibilities will have to be modified when the environment in which they arose is altered, as it now is, by technological advances that bring all men all over the world into immediate mutual relations.

It does not need a very extensive acquaintance with the new physics to draw the sort of lesson that we have just emphasized: relativity and quantum theory would suffice. These are parts of physics which have already become "classical" in the sense that there is practical unanimity in their acceptance, and there is an impressive record of success in applying the ideas in concrete situations. But there are other parts of physics in which the physicist himself is not yet clear as to the ultimate outcome and which are still controversial. Without waiting for the final solutions, I think we may draw even more important conclusions from the fields yet unconsolidated than from those which we have already mastered. It is perhaps not a common idea that there are still regions in which the scientist is groping his way and knows that he has not yet found the answers. Failure to realize this is, I think, one of the reasons back of the impatience of so many people with the scientific point of view, and back of the urge to return to a more humanistic outlook.

We have already mentioned one of the still unsolved problems in the inability of mathematicians to agree on the logical foundations

of mathematics, particularly on the nature of infinity and mathematical " existence." Another unsolved problem with even farther reaching implications is the problem of the " observer " in quantum physics. We find that we can always push our analysis to the point where the measuring instrument has to be considered as part of the system, and the interaction of the measuring instrument with the rest of the system essentially modifies the results. This sort of thing can be handled satisfactorily enough by the Heisenberg principle of indetermination. But the question which has not yet been satisfactorily answered is how to handle the observer that uses the measuring instrument. May perhaps the observer be handled as a sort of super-measuring instrument? But if I can replace the observing you by an instrument, how then shall I handle the observing me which observes you, and which is always in the background and has never been got rid of? The dilemma with which we are faced is that in order to think about a system or situation we apparently always have to imagine ourselves as an observer standing on the outside, whereas when we try to do it, we find that we always end inside the system we try to stay outside of. The problem is important for our general point of view because the problem of understanding how I function as an observer or a measuring instrument is part of the wider problem of understanding myself. This problem has been recognized for a long time as one of the fundamental ones. It was Socrates who said, " Know thyself." I can hardly expect to construct a satisfactory society unless I understand my fellow man, and how shall I understand my fellow man if I do not understand myself? I think recent experience is beginning to throw new light on this age-old problem of knowing thyself; we are beginning to see that it is a very special kind of problem and that perhaps it does not admit the sort of solution we had anticipated.

There is a recent technical achievement in logic which I find tremendously suggestive in this respect. Some of you may be familiar with Gödel's theorem. Gödel was able to prove that it is not possible to prove that a logical system does not contain concealed self-contradictions or inconsistencies by the use of any theorem which can itself be derived from the basic postulates of the system in question. In other words, no system can ever prove itself free from contradiction. If you want to prove freedom from

contradiction you have to go outside the system to do it, which implies using theorems for which there is no proof in the original context. The enunciation of this theorem by Gödel created no less than a furor among the logicians, and the buzzing has not yet died down. For this theorem at one stroke stultified the attempts of some of the ablest mathematicians. It showed that attempts are forever futile such as those of Hilbert, for example, who sought to prove by the principles of arithmetic that arithmetic contains no concealed contradictions which some day may be discovered and bring down the whole intellectual edifice in ruins. One can perhaps prove that arithmetic contains no self-contradiction, but in order to prove it one must go outside arithmetic. If then one tries to prove that the system in which it was proved that arithmetic has no contradictions itself has no contradictions, one must now go outside the super-arithmetical system. The regress has no end. But actually there is an end. For at any epoch the system containing all men and their activities is an upper limit which may not be exceeded. Logical certainty is unobtainable, and in hoping for it we are deceived by a mirage of our own creation.

It is tempting to generalize Gödel's theorem to situations wider than those presented by formal logic. A logical system attempting to prove that it itself is free from contradiction is a special case of a system dealing with itself. We are tempted to try the generalization: " Whenever a system attempts to deal with itself by including itself as a special case among others, it will be found that special awkwardnesses and infelicities, if not downright impossibilities, are encountered." The " Know thyself " of Socrates presents a special case of a system dealing with itself. I rather suspect that Socrates bit off more than can be chewed. The pressing problem for us becomes " what sort of self-knowledge is the best that we can hope to acquire? "

A possible line of attack on this problem is through a better understanding of the nature and functioning of the brains that do our thinking. Much attention is now being given to this problem; many papers are being written on models which imitate one or another of the aspects of the brain, and there was, for example, a symposium at Christmas time in the house of this Academy on the question as to what extent the brain may be regarded as a machine. All the recent interest and activity with Cybernetics points in the

same direction. Parts of Cybernetics deal with highly technical problems of communication theory as needed, for example by the telephone engineers, but back of it all there is a growing concern with the basic problem of what sort of a thing the brain is. This, I think, can only result in a better understanding of the whole situation. One of the results which is beginning to emerge is a realization of the extent to which our conscious activities have to be selected from the overwhelming number of potentialities. Ever since Freud, people have known that large parts of the activities of the brain never get into consciousness. It is only recently, however, that calculations have been made of the numerical possibilities of our conscious awareness. The figures that one gets are no less than stunning. It is known that the neurones in the brain serve in some way as basic elements in brain processes, and it is known that the brain contains something of the order of ten billion neurones. Let us suppose for the argument that different states of consciousness correspond to different ways of connecting the neurones together. Furthermore, suppose that recognizably different states of consciousness cannot follow each other more rapidly than one hundred per second, much too generous an estimate. Then it may be calculated that in a lifetime of one hundred years a man will be able to have about three hundred billion different conscious experiences. But the total number of conscious experiences with which his mental machinery is capable of providing him is so great that the number of lifetimes of one hundred years required to experience them all is a billion times the total number of electrons in the entire universe. It follows that the pictures which our perceptions are capable of giving us must be inconceivably abridged and conventionalized. Yet with such an instrument we have set ourselves the goal of knowing ourselves and our neighbor and the incomparably more complex external world, which we have clothed with the concept of a reality independent of the brain that conceives it. I cannot help feeling that it will have a pretty sobering effect when the significance of this simple calculation gets under our skins. I think a certain decent humility is inevitable. The problem for us becomes not to find the absolute truth but to find how to do the best we can with what we have.

So much for the lesson of Cybernetics. Another recent development I find equally suggestive, this time a development in psy-

chology. There has been much discussion in the popular press recently of the inquiries into the nature of perception initiated at Hanover by Dr. Adelbert Ames, Jr., and now taken over and extended by a group in the Department of Psychology of Princeton University, headed by Professor Cantrill. Their analysis of perceptions is made by a systematic exploitation of illusions of various sorts. What the psychologist will get out of this is a better understanding of the nature of the process by which perceptions are formed. It is already apparent that the process is a complicated one which involves not only the object that is being perceived but the condition of the perceiving subject. By suitably changing the immediate past experience of the perceiving subject his perception of the object may be made to vary. There is evidently a rich field of investigation for the psychologist here in finding how the perceptions depend on the experience of the subject. For me, however, the most significant aspect of this new approach is the simple realization that it forces upon us that all our conscious thinking is done in terms of perceptions. Naked sense impressions simply do not occur, and the traditional analysis of our conscious experience into naked sensations as building blocks is palpably bad description. Perceptions we have always had with us, but they are so ubiquitous that we have not been aware of their presence. The stock question of classical epistemology has been "How is it that our perceptions are able to give us true pictures of the real external world existing out there in three dimensional space?" But what is this real world itself except a reflection of our perceptions? What sort of "reality" do our perceptions have? Under what conditions do perceptions occur? It is a matter of observation that perception occurs only in the presence of a nervous system.

We cast the world into the mold of our perceptions. The fact that the world I construct is so much like the world you construct is evidence of the similarity of our nervous systems, something which any physiologist could demonstrate for you more directly. We all of us perceive the world in terms of space and time. An interesting question is how inevitably we are forced to this perception by the common properties of our nervous systems, or to what extent it is adventitious, depending on universal features in early experience and in particular on necessities incident to the use of language. This question is possibly capable of some sort of

experimental attack, but I think in any event we are here perilously close to the verge of meaning, itself. Some answer may eventually be found to the meaningful aspects of the question. In the meantime, we cannot help wondering whether perceiving the world in terms of space and time is a good way to perceive it. You may think that we already have the answer to this question, because we already know that common-sense notions of space and time have failed in the microscopic domain of quantum phenomena. But the quantum situation is not quite the same as that which we now consider. In the quantum domain we are beyond the reach of direct perception and the "space" and "time" of this domain are constructions made and extrapolated by us. We have had to ask whether these extrapolated constructions are useful, and our answer has been that there is a point beyond which they lose their usefulness. But what we are now asking is whether in the domain of ordinary experience the mold of space and time into which perception pours our world is a good mold. There can be no question but that it is a good mold for the business of everyday life, but I begin to have my doubts when I consider the apparently endless structural detail on a continually increasing scale which the astronomers are discovering, or reflect on the significance of the continuous creation of matter which many of them are finding acceptable.

These considerations are to some extent all matters of detail. Out of all the detail emerges the one stark fact that we can never get away from ourselves. Yet apparently this is the one thing that the human race feels it has to do. The philosopher with his eternal principles and truths, the man in the street with his real external world demonstrated with a kick, the mystic with his transcendental visions, and the scientist Einstein with his general theory of relativity, are all equally engaged in the search for an absolute by which they may get away from themselves. Yet the kick of the man in the street is a kick activated and apprehended by his nervous system, and the vision of the mystic would be no vision without his nervous system. Wherever we go we find *ourselves;* an observation which has the profundity of tautology, a tautology which reduces the age-long quest of the human race for standards and springs of action outside itself to the ultimate futility, the futility of meaninglessness. What sort of peace we shall eventually make with this

insight I do not know, nor do I know how the founding fathers would have acted if they had been confronted, as are we, with the necessity of finding acceptable terms for a temporary armistice until the terms of a final peace can be hammered out. But it seems inconceivable that the precise form of such of their concepts as human rights, or the dignity of the individual, or freedom or justice, so confidently enumerated in our Declaration of Independence, would have come through unscathed, for they are all tainted with the odor of the absolute.

We cannot have the founding fathers back to reconstruct our foundations for us, but we must do for ourselves the task which we may wish they might have done for us. This task is to find the present status, in the light of all the insights now available to us, of such fundamental concepts as human rights and freedom and equality and duty and justice, and in the light of these insights to strengthen if possible, or to revise if necessary, the conceptual foundation of our social and political system. This task it seems to me is a long-range one, and will demand too drastic changes in habits of thought to be accomplished in a single generation. Accomplishment of the task will demand a long campaign of education and the slow development of new intellectual techniques by a process involving much trial and error. It seems to me that the most important vision an educator can have today is the vision that this is the task of the education of the future.

Let us now turn from these abstract and somewhat academic considerations to more concrete aspects of the situation in which present-day society finds itself. These are aspects connected with the increased scale on which society now functions. A simple increase of scale may amount in practise to just as radical an alteration of fundamental conditions, and may impose as great a strain on the validity of our habits as an alteration in more patent characteristics, such, for example, as a change from a democratic to a dictatorial form of society. You remember that it was a change in scale that brought about the conceptual revolution of special relativity theory, in this case the extension of laboratory experience to velocities of a new scale of magnitude. There are several directions in which the scale of modern life has drastically altered. There is the scale of communication, by which knowledge of

events may be communicated to the entire earth with the speed of light; there is the scale of transportation by which persons and goods may be transported with the speed of sound to any part of the earth; and there is the increase in size of the communities committed to the democratic process, notably our own country. In a large community the individual comes to be so remote from the details of the social machinery that he loses his sense of connection and responsibility. Furthermore, in a large community the social machinery loses the capacity to function in ways in which it could in small communities, with the result that what may have been social virtues in a small community become virtues no longer and must be replaced by new virtues.

The weapon with which we shall try to analyze the present situation is a detailed analysis of the processes which occur in a democratic society. But before doing this I shall digress long enough to remark that this weapon of detailed analysis of process is an exceedingly potent weapon and capable of the widest application. It seems to me that it is a realization of the importance of the awareness of process which is perhaps the most sweeping characterization of the new critical outlook on the nature of concepts and thinking. It was an awareness of the processes by which time is measured that led to Einstein's special relativity theory. It was the experiencing of the logical process by which certainty is to be sought that led Bertrand Russell to renounce the goal of certainty. It is by following through the details of what we do, that we have arrived at the insight that we can never get away from ourselves and that there are some things that we cannot do with our minds.

An insight which we achieve at once by an analysis of process is the insight that society is the sum of its individuals, in the sense that if the behavior of all the component individuals is specified, there is nothing more required to specify the society which these individuals constitute. In other words, a state or a society involves no super-thing in addition to its component individuals. The contrary view has been widely held and has played no little part in political developments; a striking example was the German attitude toward the State at the beginning of the first World War. Most people, I find, accept the view that its individuals compose society, when they see what the issues are. The issue can be made clearer by imagining what would be implied if there were some super-

thing beyond its individuals in society. Imagine two societies, in each of which the behavior of every individual was exactly the same in all respects as the behavior of a corresponding individual in the other society, but one society was endowed with this hypothetical super-thing and the other lacked it. Then, unless one were informed, there is no way by which it can be told which of the two societies has this super-thing. The only function of a thing of this sort is to be talked about, and my own feeling is that even this deference should not be granted it. I have, however, met a few people who still want their super-thing in spite of all argument; if there are such in the present audience I cannot hope to touch them by what I am about to say.

Although most people will grant when they think about it that there is no mystical super-thing about society, nevertheless their actions are often the same as if they did believe in such a thing. "Government" is the name they give to this imaginary entity. The average citizen thinks that government can in some magic way procure for him any conceivable good. A society such as ours has become so large that the details of the process by which the government functions do not force themselves on the attention, with the result that the fundamental role of the individual is forgotten. In his happy conviction that the government can do anything, the average citizen does not bother to think where the things are coming from that he so easily demands. But things have to come from somewhere, and in a society they often have to come from other individuals. This I think was what Professor Northrop had in mind when he said that a society must have its roots in nature. There is a conservation law in society no less than in physics, and the things which people acquire have to come from somewhere.

If society is composed of its individuals it follows that my relations to society are a resultant of my relations to all the individuals who compose it, and that the roots of any rules which I may adopt to regulate my relations to society are to be found in the rules by which I regulate my relations to the component individuals. We will pursue some of the consequences of this presently.

Another insight which the consciousness of process gives is that always in the background of the relations of the individual to society is the potentiality of overwhelming force. Obviously, in

an orderly society, laws require for their effectiveness the possibility of enforcement of some kind, but even in an anarchistic society at any moment ten men can band together and enforce their will on any individual. Conversely, any individual in society can, by banding with other individuals, enforce his will on any other individual or indeed on a band of other individuals weaker than his own. In a society administered by a dictator with a strong police system there is not much opportunity for the exercise of this sort of forceful compulsion by the average citizen, but in a modern democracy every citizen has the power through his vote to exert force on his fellow citizen. Modern democracies have reached such a scale, our own in particular, that the sense of force is not very vividly before the individual when he goes to the polls, but it is always there in the background, and in the aggregate it is the force exerted by individuals and the groups into which they band that runs the country. This is all too evident in the functioning of the various pressure groups which have sprung up. But every pressure group is composed of individuals, and the total force which the group exerts is the result of the behavior of its individuals.

A new social problem arises; what should be the ethics which control the exercise of force by the individual in his role as a member of society? This problem is essentially new in its emphasis if not in its logic. Christian ethics was addressed in the large to the downtrodden members of a society ruled from above, to whom the suggestion that the average man could exert a directive force on large social movements would have appeared farcical. Greek ethics developed in city states so small that the effect of the vote of the individual on the well-being of other individuals was evident even to the unimaginative.

If our analysis of society into an aggregate of individuals is valid I think it is evident that the basis for the ethics of the unavoidable exercise of power by the individual in his capacity as a member of society is to be found in the ethics which govern the exercise of power by one individual on another. In particular, how shall I govern my imposition of force on my neighbor? Now I, and I think most decent people also, find it distasteful to exercise force on my neighbors; and we therefore endeavor to so direct our lives that any necessary such exercise of force will be reduced to a mini-

mum. What sort of rules will conduce to this end? It is at once evident, I think, that some rules will not conduce to this end. My greater need is not a self-respecting or feasible basis of my relation to my neighbor. This is so clearly recognized between individuals that it is just as distasteful for a decent man to demand the other's property or services because he has the greater need as it would be for him to exercise physical force to compel the other to do his will. If I may not base my demand on my neighbor on my greater need, on what may I base it with self-respect? The answer is obvious. I may make demands on my neighbor if these demands are based on services which I have rendered him. Conversely, I will gladly recognize demands which my neighbor may make on me if these demands are based on services which he has rendered me. The beauty of this reciprocal relationship is that each party gains by the transaction, exchanging something he values less for something he values more. What now will be the result of an extension of this attitude between individuals to the attitude of the individual to society in the aggregate? It will mean, first, that the individual will *not be willing* to accept from society benefits for which he does not make a return. And, secondly, when all individuals in society have this attitude the net result will be that society will not exact from any individual anything for which society cannot make return to the individual. I can see no good reason why the relations between society and individual should not be based on the same considerations of exchange and mutual advantage as the relations between individuals. Many people will perhaps be loath to accept such an ideal because it seems to offer little place for the warm personal feelings which inspire their private charities to the unfortunate. I think, however, that in any event ordinary plain humanity will compel us to honor certain minimum claims of the unfortunate on the community whether or not any return is made. But except for this, it seems to me that the basis of the relationship must be the impersonal one of exchange and mutual advantage when we operate on as large a scale as in present-day society – a community of one hundred and fifty million people in our own country and the much greater community of the free world. In fact, it is obvious by now that part of the difficulty which we are finding in dealing with the rest of the free world is just the unwillingness of a self-respecting man to accept

favors for which he can make no return or for which he is allowed to make no return.

The alternative to an ideal for the relation between society and individual based on mutual advantage and service is a relation based on relative need. This, it seems to me, leads directly to the welfare state with all its unlovely implications, as we can see by looking at England, where equal hardship for everyone is treated as an end in itself, whether or not the hardship of the individual bears any relation to the functioning of the community, and where envy of one's fellow receives official sanction as a basis for legislation. A society such as this can function only if it tolerates what seems to me the most obnoxious of all forms of do-goodism, namely the willingness of Paul to compel Peter to give Peter's goods to John if Paul decides that John needs them more than Peter.

Applied to our own society perhaps the most immediate consequence of acceptance of a mutual relationship based on mutual advantage would be a revision of the philosophy underlying our system of taxation, a philosophy which at present is to tax so as to evoke the minimum squawking from the whole community as measured at the polls. In a country with such an ideal I do not think we would have such spectacles as the recent pronouncement from Washington that although a certain tax is a bad tax we must keep it because we need the money.

A society in which the relations between society and individual are based on mutual advantage will be a society in which emphasis is placed on unfamiliar virtues. I will mention two of these. The first and absolutely fundamental virtue is the repugnance of the individual to exercise force against his neighbor for his own advantage. It may be that this virtue runs so counter to intrinsic drives in the human animal that there is no chance that society will ever accept such an ideal. For the masterful men, to whom the past progress of the race has been in large part due, have not been notable for their unwillingness to exert force on their fellows. Even the most necessary of human relationships, that of parent to child or of teacher to pupil, demand for their effective exercise some, perhaps slight, element of satisfaction in the consciousness of power, although we usually disguise it as a beneficent exercise. Education will certainly be necessary for the acceptance of this virtue, but it seems not an impossible goal. You may perhaps think

that it was this that the Scriptures had in mind in saying that the meek shall inherit the earth. I think not, however, for the obverse of the virtue of being unwilling to force one's neighbor to act to one's own advantage is the virtue of an aggressive determination to resist encroachment by one's neighbor. This is a rather paradoxical combination; perhaps it is so rare for that reason.

The second great virtue will be the imagination that can sense the significance of the simple underlying processes and relationships that are so easily lost to sight under the ever-increasing complexities of modern life. It is not easy to keep the underlying simplicities in view, and it will require high intelligence, intelligence fortified with education. Perhaps this is merely another way of saying that the great second virtue will be intelligence. This is not a new virtue; you remember that Professor Northrop told us that the founding fathers were men of intelligence.